

## MIRE, A NEW SPECIES OF BRUNFELSIA FROM BOLIVIA

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The identity of a species of *Brunfelsia* collected by Leandro Aristeguieta in March, 1953, in the State of Barinas in Venezuela (no. 1669, abundant near Barinitas) posed a problem. The plant appeared closely allied with specimens distributed as *B. bonodora* (Vell.) Macbride, *B. latifolia* (Pohl) Benth., and *B. maritima* Benth., differing, however, in the fine prominulous reticulation of veinlets on the glaucescent underside of the leaves. A similar *Brunfelsia* with the same leaf type, was collected by F. J. Hermann (11237) on March 7, 1944, near Rio Ortegua, Comisariá del Caquetá, Colombia. An attempt at routine identification of these specimens revealed considerable difficulty in the taxonomy of the genus, principally from the standpoint of evaluation of specific criteria. It also discovered a new species from Bolivia, which cannot be placed with any of those previously described, even when a great measure of variation is admitted possible for each of them.

BRUNFELSIA MIRE Monachino, sp. nov.

Frutex; foliis magnis, petiolis 3-8 mm. longis, laminis oblanceolatis 18-26 cm. longis, 5-8.5 cm. latis, ad basin angustatis, ad apicem acuminatis, glabris subtus pallidis, reticulo venarum subtus prominente, areolis latis; inflorescentiis capituliformibus, floribus numerosis confertis; pedicellis usque ad 8 mm. longis glabris; calyce campanulato usque ad 14 mm. longo glabro; corolla violacea hypocrateriformi, tubo e calyce longe exserto calycem duplex longiore 2.7-3.5 cm. longo superne paullo curvato glabro vel subglabro, limbo 3.2-5 cm. lato.

Shrub; leaves subcoriaceous, large, petiole 3-8 mm. long, blades oblanceolate 18-26 cm. long, 5-8.5 cm. broad, tapering at base, acuminate at apex, glabrous, pale beneath, lateral nerves straight, principal ones 12-13 pairs, reticulation of veins prominent beneath, areolae broad; inflorescence capituliform, flowers many, crowded, bracts sparsely minutely pubescent, pedicel up to 8 mm. long, glabrous; calyx campanulate, reticulate-venulose, up to 14 mm. long, glabrous, lobes about 3 mm. long, becoming more deeply cut; corolla violet, hypocrateriform, the tube far-exserted from calyx, about twice the length of the calyx, 2.7-3.5 cm. long, slightly curved above, gla-

brous or nearly so, limb 3.2-5 cm. broad.

Type. - Otto Buchtien 1298, Bolivia, Mepiri region, San Carlos, alt. 850 m., January 25, 1927, Baumchen, 1 m., bluten violett (flowering specimen at The New York Botanical Garden). Other specimens examined from Bolivia (deposited at N.Y.B.G.): Miguel Bang 2352, Uchimachi Coroico, in forest shade, scarce, July 20, 1894, bush, in fruit. H. H. Rusby 862, Beni River, July, 1886; 1030, near Yungas, 4000 ft., 1885; 2611, Mepiri, 2500 ft., May, 1886. O. E. White 1072, Huachi, head of Beni River, alt. 3000 ft., August, 1921, "Miré."

These six collections show uniformity in botanical characters, a constancy which has strengthened confidence in the distinctiveness of the species.

Brunfelsia Mire has been confused with B. hydrangeaeformis (Pohl) Bentham, which it resembles superficially in its large oblanceolate leaves. The affinity is rather with the B. bonodora-B. maritima group, notably with the Aristeguieta and the Hermann specimens mentioned above. The calyx of B. Mire is larger, but not as large as that of B. hydrangeaeformis, from which it differs in the nervature of its leaves, smaller glabrescent calyx, and in the great length the corolla is exerted from the calyx. Bang 2352 was cited as B. hydrangeaeformis by H. H. Rusby in the Bulletin of The New York Botanical Garden (4: 426. 1907). All the Rusby collections cited above were similarly disposed by Britton in the same Bulletin (27:23. 1900). Material represented by O. E. White 1072 was the subject of an histological examination by Heber W. Youngken in the Journal of the American Pharmaceutical Association (14:195-200. 1925). Professor Youngken, on basis of leaf anatomy, identified the plant as B. hydrangeaeformis. H. H. Rusby had previously discussed the physiological properties of the Miré in the same Journal (13:101-102. 1924). The plant was reported used by the Indians of Central Bolivia as a paralyzant of the voluntary muscles and as a remedy for cutaneous parasites. It was said to induce profuse perspiration capable of destroying all skin parasites. Thomas S. Githens (loc. cit.) corroborated the claim of muscular paralysis and stimulation of the sweat glands.

The large oblanceolate leaves, with wide areolae formed by the prominent veins, and the larger calyx separate B. Mire from the species of B. latifolia group. B. bonodora was proposed by Macbride in 1930 as based on an earlier name for B. latifolia. The basonym was Besleria bonodora Vellozo (Fl. Flum. 261. 1825; Ic. 6:80. 1827), a name placed in the synonymy

of B. latifolia by Bentham and by Schmidt. From the original description and illustration, however, Vellozo's species cannot be definitely identified, although one may guess it has been correctly interpreted. That Macbride and others since Bentham have without question identified B. bonodora with B. latifolia, is more a case of following the leader than one of independent judgment. Material from Peru identified as B. bonodora is barely distinguishable from B. maritima Bentham, at least as suggested by Spruce 1495. However, in the Spruce specimen the pedicels are long, up to 2 cm. long, and the corolla-lobes are narrow. A specimen collected by Riedel (no. 18) in Brazil resembles B. maritima-B. bonodora in Peru, proving that in Brunfelsia the same species can be widely distributed. A photo of the type of B. maritima (Lund 75, maritima Taipu pr. Rio Janeiro) is at the Field Museum. No authenticated material of B. latifolia (Pohl) Bentham (in DC. Prodr. 10:199. 1846; non B. latifolia Hort. ex Steud., in syn., 1840) was examined. The description by Bentham and that by Schmidt (in Mart. Fl. Bras. 8:257. 1862) disagree on the size of the leaves and calyx. The name was based on Franciscea latifolia Pohl (Pl. Bras. Ic. 1:3, t.2. 1827. Type. - "hab. ad Tijuca, non procul Rio de Janeiro."). The description and illustration by Pohl, "folia...ed tres uncias longae, unam et quartam, ad sesquinciem lata," do not suggest the large leaves described by Schmidt. B. grandiflora D. Don (N. Edin. Phil. Journ. Apr.-Oct., '86. 1829. Type. - "Peruvia ad Uchiza, v.s. Herb. Ruiz nunc in Mus. Lamb.") is described by Bentham as similar to and perhaps varietal of B. latifolia. The United States National Herbarium and the Field Museum were requested to send on loan southern Brazil specimens of B. latifolia, B. bonodora, and B. maritima, but no authenticated material of the first two was received. The Field Museum lacked southern Brazilian specimens of B. latifolia and B. bonodora; the U. S. Nat. Herbarium supplied two, one from Rio de Janeiro that flowered at the Botanical Garden, Washington, D. C., and only one actually collected in the wild, Kuhlmann 1327, Matto Grosso, Caminho do Porto Velho, determined by C. V. Morton. The latter specimen, with puberulent leaf-underside, calyx and corolla, the calyx up to 12 mm. long, corolla-tube up to 3.5 cm long, so differs from others named B. latifolia that, on the one hand it suggests something new, and on the other hand casts suspicion on the specific distinctions that already have been drawn in the genus. It is thus seen that the specimens available fell far short of the number examined

by Bentham and by Schmidt. Therefore a clarification of the true identity of B. bonodora and B. latifolia was not possible by circumstantial evidence, that is, by suits of specimens from the type localities, any more than by examination of the types.

Of the Multiflorae with the corolla-tube far exerted from the calyx, there is B. ramosissima (Pohl) Bentham (based on Franciscea ramosissima Pohl, 1827). The earlier Gerardia brasiliensis Sprengel (1825) is probably the same (the name "Gardouia obovata Spr." has also been referred to the same species), and a strict application of priority would demand a new combination. Two formae of B. ramosissima were described by Schmidt in 1862,  $\beta$ . confertiflora (Franciscea confertiflora Pohl) and  $\gamma$ . parciflora, in addition to the typical forma. The species has short narrow leaves and an entirely different appearance from B. Mire. Schmidt placed Franciscea divaricata Pohl in the synonymy of B. ramosissima  $\beta$ . confertiflora, and B. acuminata (Pohl) Bentham in that of B. ramosissima.

Of the Multiflorae with the corolla-tube usually not as prominently exerted from the calyx (see also B. macrophylla and B. silvicola), B. Lindeniana (Planch.) Nicholson (Franciscea Lindeniana Planchon, 1865, "introduction de Libon, qui l'a envoyé de les catingas de l'interieur de la province de Ste. Cathérine à M. Linden.") appears to have smaller leaves than our species, and a long cylindrical calyx-tube, according to specimens from cultivation deposited at The New York Botanical Garden. An isotype of B. obovata Bentham is at N.Y.B.G. B. cuneifolia J. A. Schmidt and B. silvicola Taubert ("calyce...corollae tubum medium vix aequante...folia 2.5-5 x 1.5-2 cm.") are described as allied with B. obovata. Frées 20210 from the region of Serras de Sincorá, Bahia, suggests B. bahiensis, but the leaves are smaller, 4-8.5 cm. long (in B. bahiensis "3-4 poll. longa, 1-1.5 poll. lata."). Of the larger leaved species authenticated material of B. hydrangeaeformis (Pohl) Bentham and an isotype of the very closely related B. capitata Bentham (Gardner 563) were available. The varieties B. capitata  $\beta$ . angustifolia Bentham and B. hydrangeaeformis  $\beta$ . glabriuscula Schmidt (syntype. - Gardner 563, the type number of B. capitata) have been proposed. B. macrophylla (Cham. & Schlecht.) Bentham was described as similar to B. hydrangeaeformis (type. - Brasil aequinoctiale, Sellow. "corollae tubo subrecto calyce subduplo longiore...calyx 10-12 lin longus...folia...subtus praecipue ad nervos venasque rufo-pubescentia...in petiolum...rufo-tomentosum attenu-

ata."). B. exima (Scheidweiler) Hooker is referred to B. hydrangeaeformis. B. calycina Benth (type. - Lund 755, S. Paulo, "calyx pollicaris...foliis...in nervo medio subtus hirtellus.") is referred to B. pauciflora  $\beta$ . calycina by Schmidt. Besleria inodora Vellozo (non Brunfelsia inodora Martius) is also placed in the synonymy. Franciscea (Brunfelsia) macrantha Lemaire was described as having a large tomentose calyx. The combination "Brunfelsia macrantha" has been attributed to Lemaire by Bailey and Raffill, but Lemaire noted that his species was not a true Brunfelsia. Bailey and Raffill listed the new combinations B. calycina var. macrantha and B. calycina var. eximia, and also B. calycina var. floribunda (based on B. floribunda Hort.).

The Longiflorae are chiefly of the West Indies. B. inodora Martius was described from cultivation. B. Tastevini Benoist (1928), from Rio Jardim in the Amazon Valley, was described as having a corolla-tube 4 cm. long, and was said to resemble B. americana.

The Uniflorae in South America comprise perhaps three species. The basonym of B. uniflora (Pohl) Don antedates that of B. Hopeana (Hook.) Benth by one year. The description of B. mutabilis (Pohl) Poiteau presents no point of difference from B. uniflora. B. australis Benth was reduced to a variety of B. Hopeana by Schmidt. A Kuntze specimen (x. 92) identified as B. australis (inflorescence up to 4-flowered), obtained from cultivation in Paraguay, resembles some cultivated forms named B. latifolia. B. paraguayensis Chodat was referred to B. uniflora forma obovatifolia Hassler by Hassler, who also proposed B. uniflora forma intermedia. A Trinidad specimen collected by L. J. Graff recalls B. Hopeana  $\beta$ ? pubescens Benth (possibly B. Lockharti Hort. ex Heynh., nomen nudum), originally based on a Lockhart specimen from Trinidad. Miller & Johnston 265 from Margarita Island also has pubescent leaves, but likewise pubescent are the young leaves of Gardner 1798, a collection cited by Benth as typical B. Hopeana. C. V. Morton (Proc. Biol. Soc. Wash. 62:151-152. 1949) presents differences between his B. amazonica (isotype at N.Y.B.G., corolla-tube about 2 cm. long) and B. guianensis Benth.

The Regel names in Brunfelsia (falcata, gracilis, longiflora, multiflora, Sieberi) and B. Schomburgkiana Klotzsch are nomina nuda. The following names were published in synonymy: B. augusta Hort. ex Gentil, under B. calycina; B. Spruceana hb. M. by Schmidt under B. maritima, Martia opifera Lacerda in hb. M. under B. Hopeana, and F. Pohliana Hort. ex Schmidt under B. ramosissima.

The above Brunfelsia species and names involved were reviewed in order to clear B. Mire. It is noted that much reliance had to be placed on descriptions and that the material available was inadequate for delimiting the taxa accurately. For a true understanding of the species of Brunfelsia a critical revision of the whole genus is required.

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ADDITIONAL NOTES ON THE GENUS AEGIPHILA. XI

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AEGIPHILA Jacq.

Unidentified species of this genus are mentioned in Guilherme de Almeida, Revista Flórestal 5: 15 & 17, figs. 7 & 8 (1946); Falcão, Guia dos Visitantes Jard. Bot. Rio de Jan. 42 (1947); and Kuhlmann & Kühn, Flor. Dist. Ibiti 116 (1949), as well as in Plantae Hasslerianae 9: 200 (1902) and in Stellfeld, Vellozoa 4 (5): 99 (1946). Almeida reports his plant is used for cork in Brazil, while Kuhlmann & Kühn describe theirs as ptenophyte, "arbusto da capoeira, Estação Experimental, sem órgãos prolificos em Março de 1943, M. K[uhlmann] no. 1,277".

The Murça Pires & Black 891 (Be--17905), distributed as a member of this genus, is actually a species of Besleria; Rambo 42114 and 43385 are a species of Pisonia; Schwacke s.n. [11/IX/887; Herb. Rio de Jan. 44804] is a species of Hyptis; and the J. M. Schunke s.n. [Herb. Mus. Javier Prado 44234; W--1901564] may be a species of Schlegelia.

AEGIPHILA ACULEIFERA Moldenke

The species is described by Little as a small tree 5 to 10 m. tall, the trunk 5--10 cm. in diameter at breast height, with gray rough bark, growing at an altitude of 8900 feet, with white-pink flowers blooming in April.

Additional citations: COLOMBIA: Huila: Little 7711 (N).

AEGIPHILA ALBA Moldenke

Little in Carib. Forester 9: 269 (1949) describes the species as a small to large tree 8 to 20 m. tall, with a trunk 15 to 30 cm. in diameter, common especially in cutover areas, in wet tropical and mountain forests, widely distributed in western Ecuador. He records the additional common names of "savaluca" and "savaluca de montaña".

Additional citations: ECUADOR: Esmeraldas: Little 6331 [U. S. Forest Serv. 98292] (N). Guayas: Camp E.3606 (N).

AEGIPHILA AMAZONICA Moldenke

The species is described as a shrub or small tree, with green branches and white flowers blooming in January, April, September,